



QEEG Clinical Report

BrainLens V0.4



Report Description

Personal & Clinical Data

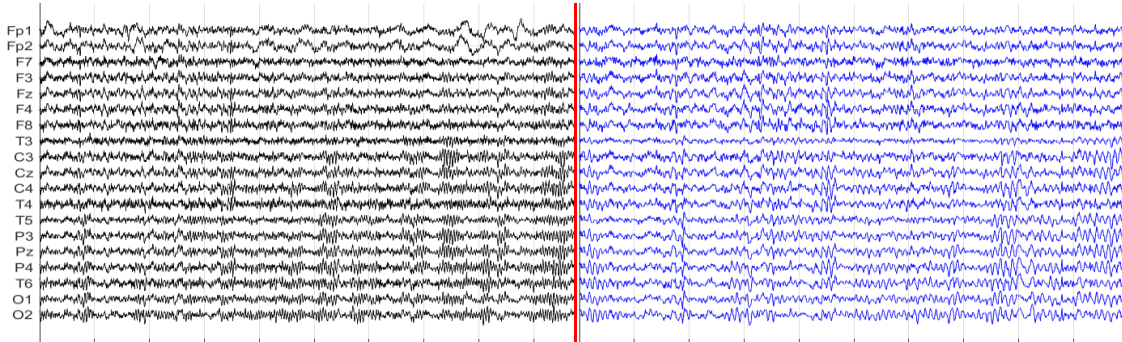
Name	Reza Baeitabar	Date of Recording	02-Sep-2024
Date of Birth - Age	20-Jul-1992 - 32.12	Gender	Male
Handedness(R/L)	Right	Source of Referral	Rahnemon Clinic
Initial Diagnosis	Attention and concentration and memory problems, distraction and Memory loss - Mood swings- Rumination		
Current Medication	Medication Free		

Rahnemon Clinic

Denoising Information (EC)

Raw EEG

Denoised EEG



Flat Channels

Rejected Channels

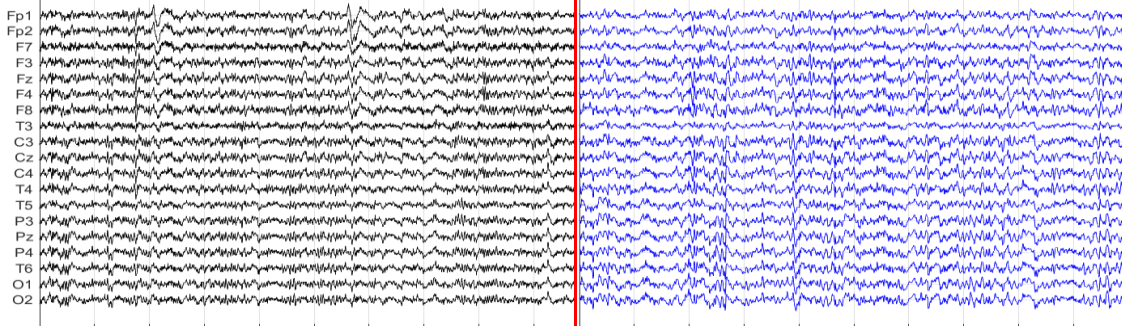


Number of Eye and Muscle Elements				Low Artifact Percentage	
Eye	2	Muscle	2		
Total Artifact Percentage				High Artifact Percentage	
EEG Quality		good		Total Recording Time Remaining	
				131.59 sec	

Denoising Information (EO)

Raw EEG

Denoised EEG



Flat Channels

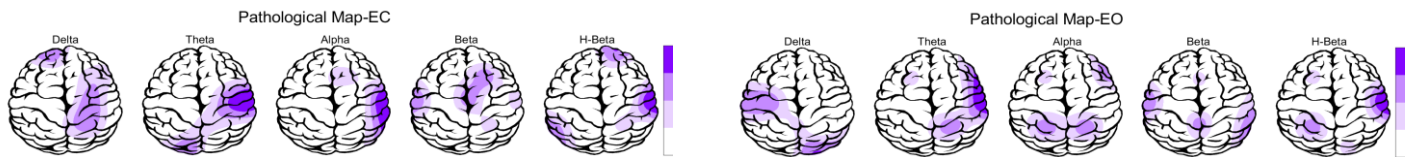
Rejected Channels



Number of Eye and Muscle Elements				Low Artifact Percentage	
Eye	1	Muscle	2		
Total Artifact Percentage				High Artifact Percentage	
EEG Quality		good		Total Recording Time Remaining	
				122.34 sec	

Pathological assessment for mood disorders

Compare to Mood Disorders Database



EEG Compatibility with Depression Diagnosis

Depression Table	EC		EO	
Feature Name	Threshold	Region	Threshold	Region
Increased Global rAlpha	0.00	NAN	0.00	NAN
Increased global rTheta	0.00	NAN	0.00	NAN
Decreased rDelta	0.00	NAN	0.00	NAN
Increased rBeta	0.00	NAN	0.50	MF
Left FAA	-0.10	Left FAA	-0.09	Left FAA
Right OAA	0.00	NAN	0.00	NAN
Decreased Coherence (D, T)	0.00	NAN	0.00	NAN
Increased Coherence (A, B)	1.00	Increased Coherence	2.00	Increased Coherence

depression

0 10 20 30 40 50 60 70 80 90 100

Depression Probability

EEG Compatibility with Anxiety Diagnosis

Anxiety Table	EC		EO	
Feature Name	Threshold	Region	Threshold	Region
Decreased rAlpha	0.00	NAN	-0.50	LF-O-
Increased rBeta	0.00	NAN	0.50	MF
Right FAA	0.00	NAN	0.00	NAN
Left OAA	-0.14	Left OAA	-0.02	Left OAA
Increased IAF > 10.6	0.00	NAN	0.00	NAN

Anxiety

0 10 20 30 40 50 60 70 80 90 100

Anxiety Probability

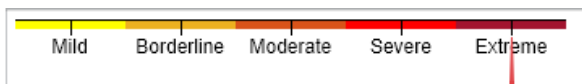
EEG Compatibility with Mood Swings Diagnosis *

Mood Swings Table	EC		EO	
Feature Name	Threshold	Region	Threshold	Region
Decreased rAlpha	0.00	NAN	-0.50	LF-O-
Increased (rDelta+rTheta)	0.50	LF-RF-MF-	0.50	RF-RT-O-
Increased rBeta	0.00	NAN	0.50	MF
Decreased Alpha Coherence	0.00	NAN	-0.50	Decreased Alpha
Right FAA	0.00	NAN	0.00	NAN

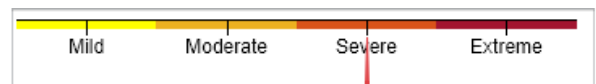
Mood Swings Probability

* This index can only be investigated if there are symptoms of mood swings (R/O BMD or R/O mood swings).

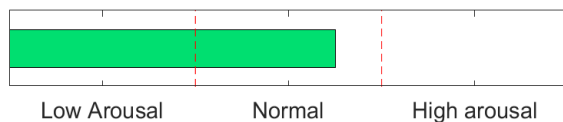
Depression Severity



Anxiety Severity

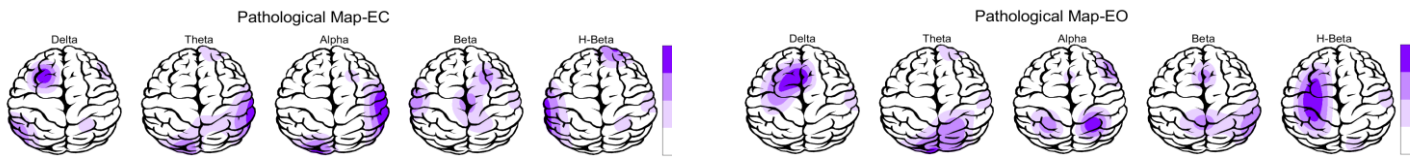


Arousal Level Detection

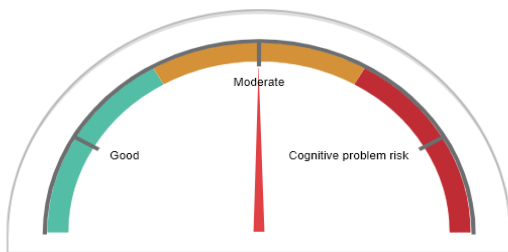


Pathological assessment for adult ADHD

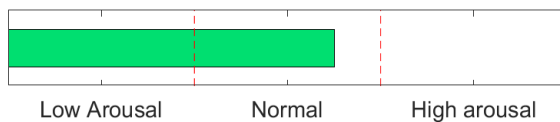
Compare to Adult ADHD Database



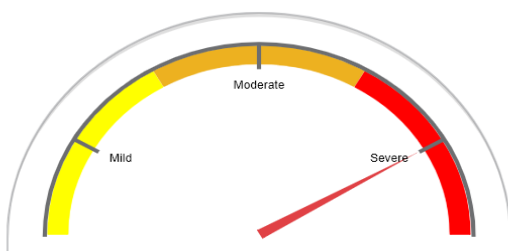
Cognitive Functions



Arousal Level Detection



Adult ADHD Severity

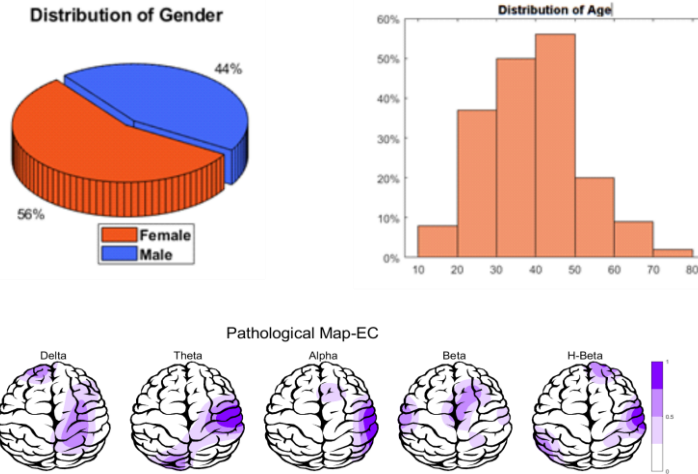


rTMS Response Prediction

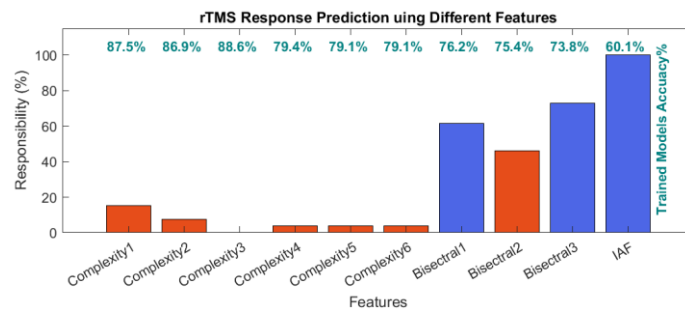
Network Performance

Accuracy: 92.1%
Sensitivity: 89.13%
Specificity: 97.47%

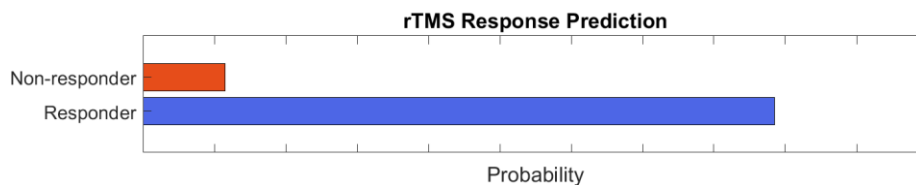
Participants Information



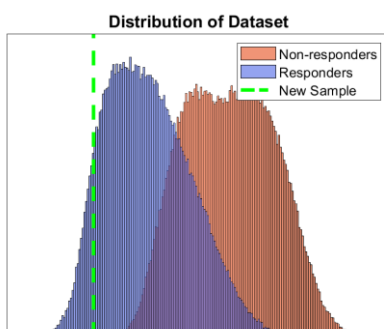
Features Information



Responsibility



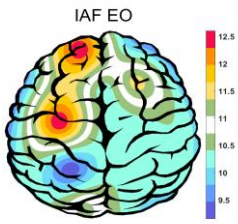
Data Distribution



About Predicting rTMS Response

This index was obtained based on machine learning approaches and by examining the QEEG biomarkers of more than 470 cases treated with rTMS. The cases were diagnosed with depression (with and without comorbidity) and all were medication free. By examining more than 40 biomarkers capable of predicting response to rTMS treatment in previous studies and with data analysis, finally 10 biomarkers including bispectral and nonlinear features entered the machine learning process. The final chart can distinguish between RTMS responsive and resistant cases with 92.1% accuracy. This difference rate is much higher than the average response to treatment of 44%, in the selection of patients with clinical criteria, and is an important finding in the direction of personalized treatment for rTMS.

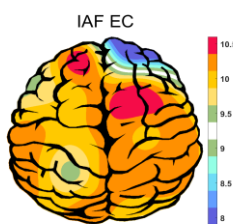
APF(EO)



Frontal APF= 11.42

Posterior APF= 10.25

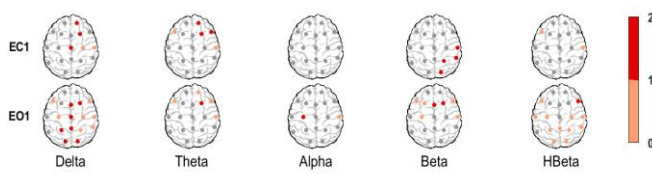
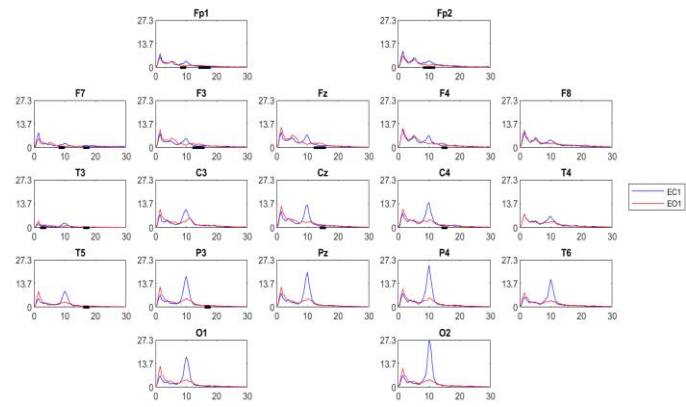
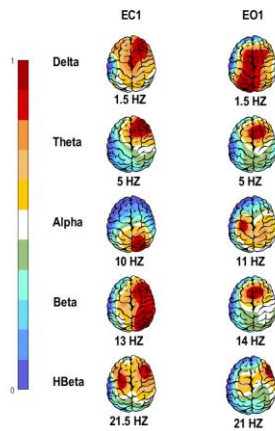
APF(EC)



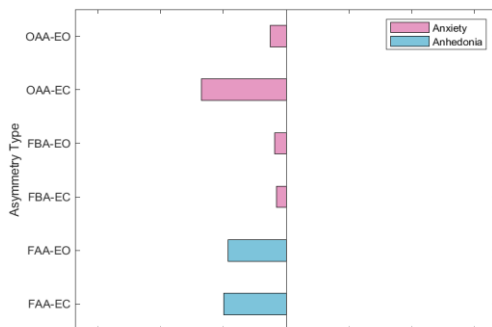
Frontal APF= 10.17

Posterior APF= 10.25

EEG Spectra



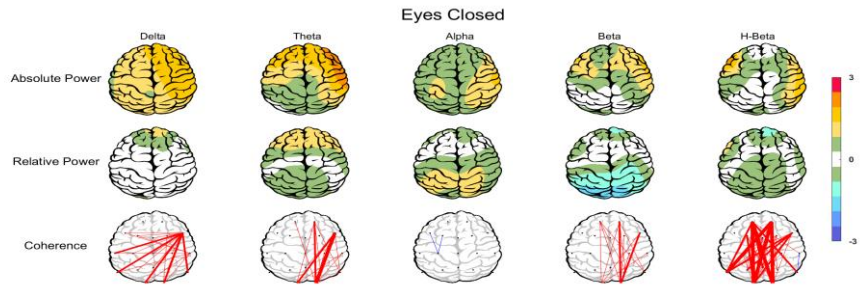
Alpha Asymmetry(AA)



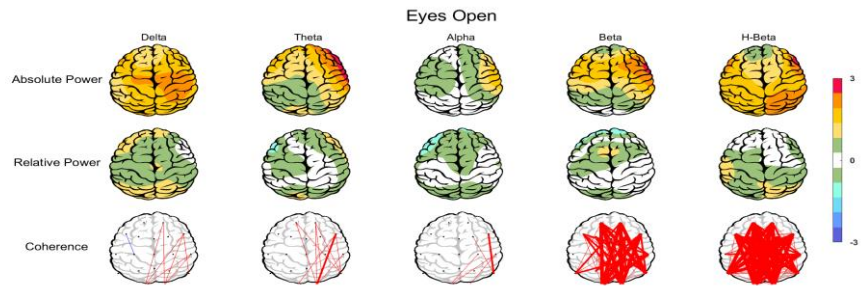
Alpha Blocking



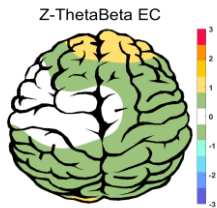
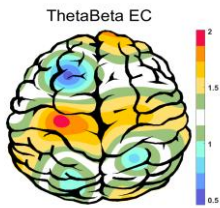
Z Score Summary Information (EC)



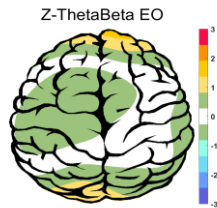
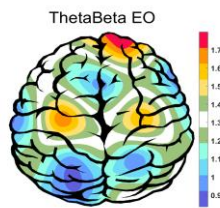
Z Score Summary Information (EO)



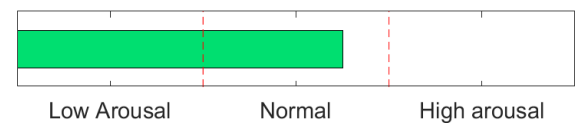
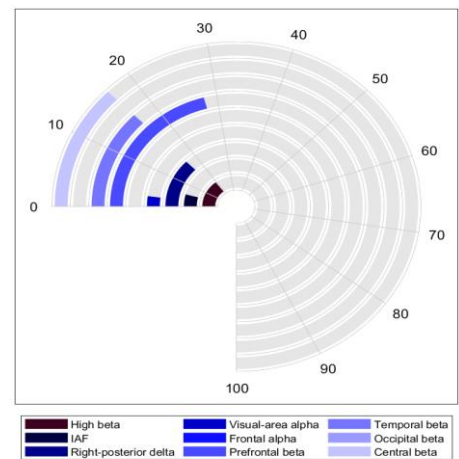
E.C.T/B Ratio (Raw- Z Score)



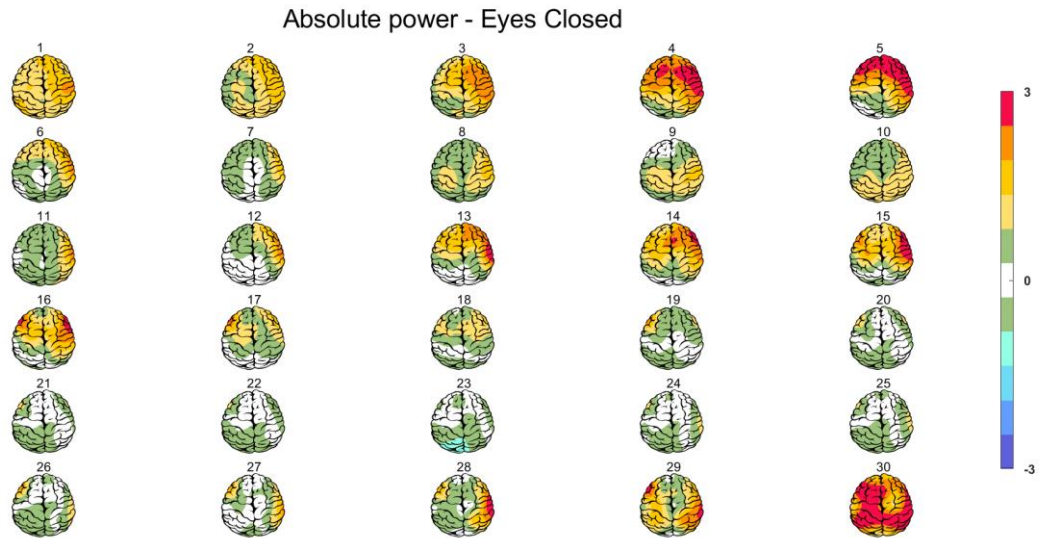
E.O.T/B Ratio (Raw- Z Score)



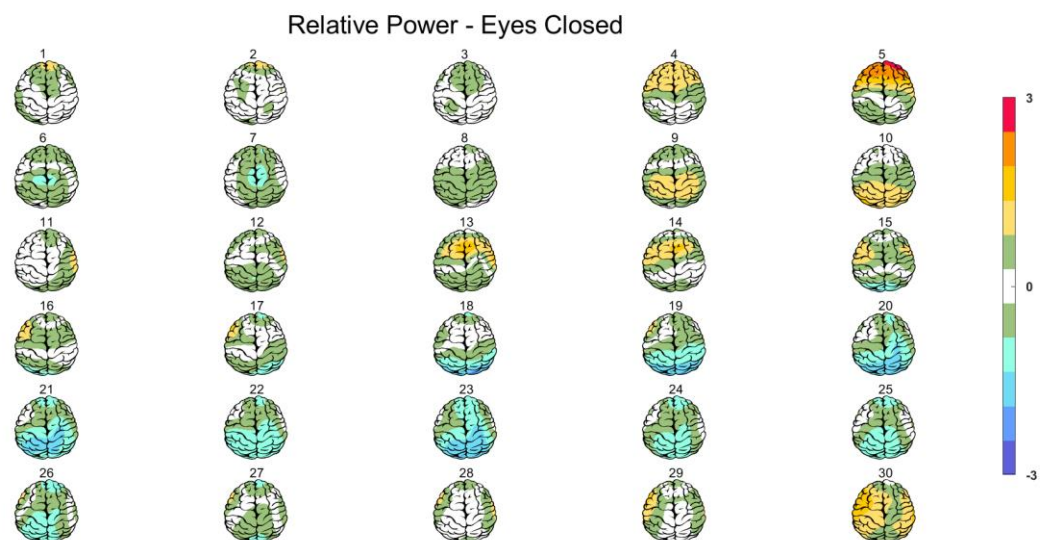
Arousal Level



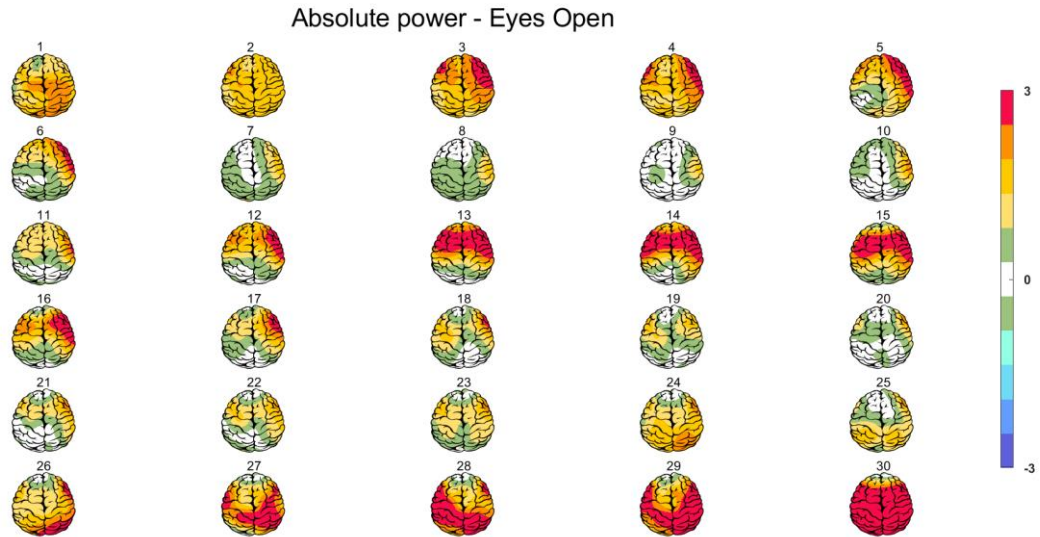
Absolute Power-Eye Closed (EC)



Relative Power-Eye Closed (EC)



Absolute Power-Eye Open (EO)



Relative Power-Eye Open (EO)

